

## SMALL MOLECULE ANTAGONISTS OF BCL-2 FAMILY PROTEINS

### ABSTRACT

The present invention relates to naturally occurring and chemically synthesized small molecule antagonists of Bcl-2 family proteins. In particular, the present invention provides gossypol compounds (*e.g.*, isomers, enantiomers, racemic compounds, metabolites, derivatives, pharmaceutically acceptable salts, in combination with acids or bases, and the like) and methods of using these compounds as antagonists of the anti-apoptotic effects of Bcl-2 family member proteins (*e.g.*, Bcl-2, Bcl-X<sub>L</sub>, and the like). The present invention also provides compositions comprising gossypol compounds and optionally one or more additional therapeutic agents (*e.g.*, anticancer/chemotherapeutic agents). The present invention also provides methods for treating diseases and pathologies (*e.g.*, neoplastic diseases) comprising administering a composition comprising gossypol compounds and optionally one or more additional therapeutic agents (*e.g.*, anticancer/chemotherapeutic agents) and/or techniques (*e.g.*, radiation therapies, surgical interventions, and the like) to a subject or *in vitro* cells, tissues, and organs.